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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ALBERTALLI, BRIAN LOUIS	

ART UNIT	PAPER NUMBER
2655	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/815,808	BOULANOV, OLEG	
	Examiner	Art Unit	
	Brian L. Albertalli	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-28 and 30-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-28 and 30-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments to the claims have been entered. Claims 1, 7, 9, 10, 24, 30, 32, 33, 36, and 38 are currently amended, and claims 6 and 29 are currently canceled.

Response to Arguments

2. Applicant's arguments filed July 11, 2005 have been fully considered but they are not persuasive.

Regarding the argument that Stanford et al. do not disclose semantic processing (page 10, lines 6-8), it is noted that while the specification refers to a "semantic representation" of the spoken answers given by a user, there is no clear definition of what comprises the claimed "semantic representation". Further, the specification states that the semantic representation can be used by a "transaction initiator". This suggests that the semantic representation is nothing more than the command representation used by the computer (e.g. a call to a computer software function in computer code) that corresponds with the user's verbal input. That is, if the user verbally requests a certain service (e.g. retrieving the user's email), the "semantic representation" is the actual function call to implement that service. Without any specific definition of "semantic representation" given, the Examiner has interpreted the term to mean <u>a representation of the meaning of the user's verbal input</u>. Equivalently, Stanford et al. disclose that recognition server (Fig. 1 108) communicates with user applications (110, column 9, lines 51-53). The communication is to perform services in the user applications that

were verbally requested by the users, thus the communications between the recognition server 108 and the user applications 110 is a "semantic representation" of the user's verbal input and the recognition server 108 "converts a syntactic message to a semantic message" as claimed.

Regarding the argument that the thrust of Stanford et al. is how to accommodate speech recognition within the resources of a single computer or microprocessor (page 10, lines 8-9), the Applicant has relied on a brief statement by Stanford et al. that a goal of the invention is to provide a speech recognizer with a minimum memory requirement. This is not persuasive because minimizing memory requirements is desirable regardless of the implementation. Further, although the Applicant has alleged that the architecture works on a single computer (without any indicated support from the reference), Stanford et al. specifically states that the system is organized around speech recognition functions being deployed as speech recognition servers (column 9, line 66 to column 10, line1).

Regarding the argument that is "far from trivial or obvious how to make any specific tasks work over multiple computers in a network" (page 10, lines 13-15), as indicated above, Stanford et al. suggests performing the function over multiple computers in a network (servers). Furthermore, the disclosure of Stanford et al. recognizes the separation of different functions (such as converting a voice data message to a phonetic data message) by implementing each function as separate blocks or objects. As disclosed by Christensen et al., once a function is implemented as a distinct object, implementing the objects remotely provide the advantages of allowing

the physical performance and administration needs of a computer system to be fully addressed without having to give up the logical model (column 13, lines 63-67). Furthermore, the remote automation disclosed by Christensen et al. allows existing applications to be implemented remotely without modifying the existing applications (column 2, line 64 to column 3, line 6).

In response to applicant's arguments against the references individually (that Christensen et al. do not disclose providing physical performance or administration of a speech recognition system, page 11, lines 305), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). That is, it is the combination of Stanford et al. and Christensen that disclose a remote architecture for speech recognition, therefore the teachings of Christensen et al. (administration and physical performance), as applied to the combination, would be for a speech recognition system.

3. Additionally, the reference to Ekrot et al. (U.S. Patent 5,675,723) has been corrected herein and indicated on the Notice of References Cited form included with this action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 14-18, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanford et al. (U.S. Patent 5,615,296), in view of Christensen et al. (U.S. Patent 5,881,230).

In regard to claim 14, Stanford et al. disclose a method of processing speech comprising:

receiving, at a first server object, a voice data message from a telephone network (low bandwidth telephony voice data stream, column 8, lines 22-25);

transmitting said voice data message to a second server object (connection between 100 and 102);

converting said voice data message to a phonetic data message in said second server object (vector quantization block 104 uses Cepstral coefficients converted from the input speech, column 8 line 65 to column 9 line 4; to select the closest codebook values, each codebook value representing phonetic data, column 9, lines 38-48);

transmitting said phonetic data message from said second server object to a third server object over said first computer network (connection between 104 and 106)

converting said phonetic data message to a syntactic data message in said third server object (phonetic time series is converted to word sequences, column 9, lines 49-51);

transmitting said syntactic data message from said third server object to a fourth sever object over said first computer network (connection between 106 and 108); and

converting said syntactic data message to a semantic data message, representative of said voice data message in said fourth server object (recognition server converts word sequences to communicate with user applications, column 9, lines 51-53);

Furthermore, Stanford et al. disclose the architecture is independent of hardware configurations (column 7, lines 56-57) and implemented for different levels of operation over a communications network (column 9, lines 58-65).

Stanford et al. do not explicitly disclose that the transmissions are sent over a first computer network.

Christensen et al. disclose a system for remote objects to communicate over a computer network (Fig. 4 and column 9, lines 10-17).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. so the first (connection between 100 and 102), second (connection between 104 and 106), and third (connection between 106 and 108) connections were formed over a first computer network, as disclosed by Christensen et al., since remote automation allows the physical performance and administration needs of a computer system to be fully addressed without having to give up the logical model, as taught by Christensen et al. (column 13, lines 63-67).

In regard to claim 15, Stanford et al. disclose said fourth server object (108) is coupled to a second computer network (connection between 108 and 110) for receiving an application code from a client (110) of said second computer network, said

application code providing control data for the operation of said speech recognition system (control data is sent from user applications to request the services of the speech recognition system, column 10, lines 13-18).

In regard to claim 16, the combination of Stanford et al. and Christensen et al., as applied to claim 14, above, discloses in Christensen et al. said first computer network is one of a local area network and the internet (column 14, lines 44-47).

In regard to claim 17, Stanford et al. disclose said second computer network is one of a local area network and the internet (remote procedure calls must necessarily occur over a local area network, column 10, lines 21-25).

In regard to claim 18 Stanford et al. do not disclose said first, second and third connections are formed from named pipes.

Christensen et al. disclose making connections formed from named pipes (column 9, lines 49-51).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. to form the connections from named pipes, since a named pipe can be used by processes that do not have to share a common process origin and the message sent to the named pipe can be read by any authorized process that knows the name of the named pipe, which allows simple method of communicating between unrelated processes.

In regard to claim 22, Stanford et al. do not disclose that the server objects are configured by said according to the Distributed Component Object Model (DCOM).

Christensen et al. disclose that the server objects are configured by the Distributed Component Object Model (column 12, lines 50-54).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. to configure the objects according to the DCOM, since DCOM allows processes to transparently send and receive information so that processing can easily be assigned to different servers as processing resources become available.

In regard to claim 23, Stanford et al. disclose processing said semantic data message in said fourth server object according to said application code (user applications 110 request the services of the recognition server 108, column 10, lines 13-15).

6. Claims 1-13, 19-21 and 24-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stanford et al. (U.S. Patent 5,615,296), in view of Christensen et al. (U.S. Patent 5,881,230), and further in view of Ekrot et al. (U.S. Patent 5,675,723).

In regard to claims 1 and 24, Stanford et al. disclose a speech recognition system (Fig. 1) and method comprising:

a line of service including:

a first server object (100) coupled to a telephone network for receiving a voice data message from said telephone network (low bandwidth telephony voice data stream, column 8, lines 22-25);

a second server object (front end comprising blocks 102 and 104) having a first connection (connection between 100 and 102) to said first server object (100) for receiving said voice data message from said first server object and converting said voice data message to a phonetic data message (vector quantization block 104 uses Cepstral coefficients converted from the input speech, column 8 line 65 to column 9 line 4; to select the closest codebook values, each codebook value representing phonetic data, column 9, lines 38-48);

a third server object (106) having a second connection (connection between 104 and 106) to said second server object (front end comprising blocks 102 and 104) for receiving said phonetic data message (phonetic time series from front end) from said second server object and converting said phonetic data message to a syntactic data message (phonetic time series is converted to word sequences, column 9, lines 49-51); and

a fourth server object (108) having a third connection (connection between 106 and 108) to said third server object (106) for receiving said syntactic data message (word sequence) from said third server object and converting said syntactic data message to a semantic data message, which is representative of said voice data message (recognition server converts word sequences to communicate with user applications, column 9, lines 51-53);

Furthermore, Stanford et al. disclose the architecture is independent of hardware configurations (column 7, lines 56-57) and implemented for different levels of operation over a communications network (column 9, lines 58-65).

Stanford et al. do not explicitly disclose that the first, second, and third connections are formed over a first computer network.

Christensen et al. disclose a system for remote objects to communicate over a computer network (Fig. 4 and column 9, lines 10-17).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. so the first (connection between 100 and 102), second (connection between 104 and 106), and third (connection between 106 and 108) connections were formed over a first computer network, as disclosed by Christensen et al., since remote automation allows the physical performance and administration needs of a computer system to be fully addressed without having to give up the logical model, as taught by Christensen et al. (column 13, lines 63-67).

Furthermore, in regard to claim 24, Christensen et al. disclose the physical layering can be changed without changing the logical model (column 14, lines 10-12). For the same reasons as given above, therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further modify Stanford et al. to combine both the conversion of the voice data message to a phonetic data message and the conversion of the phonetic data message to a syntactic data message in a single speech recognition server.

The combination of Stanford et al. and Christensen et al. do not disclose a control monitor for controlling the configuration of said first, second, third and fourth server objects in said line of service.

Ekrot et al. disclose a control monitor (Fig. 3, backup server 200) that controls the configuration of server objects (if one of primary servers 202 and 204 fails, the backup server 200 acts as a server in place of the server that failed, column 5, lines 19-21 and lines 37-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Stanford et al. and Christensen to include a control monitor for controlling the configuration of said first, second, third and fourth server objects in said line of service, in order to keep the system functional if one of the server objects failed without taking the system offline.

In regard to claims 2 and 25, Stanford et al. disclose said fourth server object (108) is coupled to a second computer network (connection between 108 and 110) for receiving an application code from a client (110) of said second computer network, said application code providing control data for the operation of said speech recognition system (control data is sent from user applications to request the services of the speech recognition system, column 10, lines 13-18).

In regard to claims 3 and 26, the combination of Stanford et al. and Christensen et al., as applied to claims 1 and 24, above, discloses in Christensen et al. said first

computer network is one of a local area network and the internet (column 14, lines 44-47).

In regard to claims 4 and 27, Stanford et al. disclose said second computer network is one of a local area network and the internet (remote procedure calls must necessarily occur over a local area network, column 10, lines 21-25).

In regard to claims 5 and 28 Stanford et al. do not disclose said first, second and third connections are formed from named pipes.

Christensen et al. disclose making connections formed from named pipes (column 9, lines 49-51).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. to form the connections from named pipes, since a named pipe can be used by processes that do not have to share a common process origin and the message sent to the named pipe can be read by any authorized process that knows the name of the named pipe, which allows simple method of communicating between unrelated processes.

In regard to claims 7-9 and 30-32, Stanford et al. and Christensen et al. do not disclose periodically transmitting a status signal to said system monitor.

Ekrot et al. disclose server objects that periodically transmit a status signal to said system monitor, wherein the transmission of said periodic status signal from said

server objects to said system monitor indicates that said server objects is operational, and wherein a nontransmission of said periodic signal indicates that one of said server objects is disabled (a heartbeat signal is sent from primary servers 202 and 204 to standby server 200, and when the standby server 200 ceases to receive signals from one of the primary servers 202 and 204, one of the primary servers has failed, column 5, lines 30-37; Furthermore, when one of the primary servers 202 and 204 has failed, the standby server 200 acts as a backup for the primary servers, column 5, lines 37-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Stanford et al., and Christensen et al. to periodically transmit a status signal to the system monitor and to include backup objects for objects that stop sending status signals, so the system as a whole would continue to function even if one of the server objects failed.

In regard to claims 10 and 33, Stanford et al. do not disclose that the server objects are configured by said according to the Distributed Component Object Model (DCOM).

Christensen et al. disclose that the server objects are configured by the Distributed Component Object Model (column 12, lines 50-54).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. to configure the objects according to the DCOM, since DCOM allows processes to transparently send and receive information so that

processing can easily be assigned to different servers as processing resources become available.

In regard to claims 11 and 34, the Stanford et al. do not disclose . that each server object includes a post office for addressing and routing messages through the line of service.

Christensen et al. disclose that each server object include a post office (RA proxy object application 68) for addressing and routing messages through the line of service (RA proxy 68 uses the network address of the remote computer to route the locally called object to the remote computer, column 9, lines 21-36).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. to include a post office for addressing and routing messages, since a post office manages the ordering a packaging of data to suit the particular network link and protocol, as taught by Christensen et al. (column 10, lines 27-35).

In regard to claims 12 and 35, Stanford et al. disclose additional lines of service connected between said telephone network and said second computer network (several versions of the recognition server are run, column 10, lines 50-52).

In regard to claim 13, Stanford et al. disclose the architecture is independent of hardware configurations (column 7, lines 56-57) and implemented for different levels of operation over a communications network (column 9, lines 58-65).

Christensen et al. disclose a system for remote objects to communicate over a computer network (Fig. 4 and column 9, lines 10-17).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. make the voice, acoustic, symbolic and task server objects, as well as the voice server object, speech recognition server, and task server object remote to each other, since remote automation allows the physical performance and administration needs of a computer system to be fully addressed without having to give up the logical model, as taught by Christensen et al. (column 13, lines 63-67).

In regard to claim 19, the combination of Stanford et al. and Christensen et al. do not disclose a control monitor for controlling the configuration of said first, second, third and fourth server objects in said line of service.

Ekrot et al. disclose a control monitor (Fig. 3, backup server 200) that controls the configuration of server objects (if one of primary servers 202 and 204 fails, the backup server 200 acts as a server in place of the server that failed, column 5, lines 19-21 and lines 37-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Stanford et al. and Christensen to include a control monitor for controlling the configuration of said first, second, third and fourth

server objects in said line of service, in order to keep the system functional if one of the server objects failed without taking the system offline.

In regard to claims 20-21, the combination of Stanford et al., and Christensen et al. as applied to claim 14, does not disclose periodically transmitting a status signal to said system monitor.

Ekrot et al. disclose server objects that periodically transmit a status signal to said system monitor, wherein the transmission of said periodic status signal from said server objects to said system monitor indicates that said server objects is operational, and wherein a nontransmission of said periodic signal indicates that one of said server objects is disabled (a heartbeat signal is sent from primary servers 202 and 204 to standby server 200, and when the standby server 200 ceases to receive signals from one of the primary servers 202 and 204, one of the primary servers has failed, column 5, lines 30-37; Furthermore, when one of the primary servers 202 and 204 has failed, the standby server 200 acts as a backup for the primary servers, column 5, lines 37-42).

It would have been obvious to one of ordinary skill in the art at the time of invention to further modify the combination of Stanford et al., and Christensen et al. to periodically transmit a status signal to the system monitor and to include backup objects for objects that stop sending status signals, so the system as a whole would continue to function even if one of the server objects failed.

In regard to claim 36, Stanford et al. disclose the speech recognition server (the combination of the front end and back end) an acoustic server object for receiving said voice data message from said voice server object and converting said voice data message to said phonetic data message (vector quantization block 104 uses Cepstral coefficients converted from the input speech, column 8 line 65 to column 9 line 4; to select the closest codebook values, each codebook value representing phonetic data, column 9, lines 38-48) and a symbolic server object (106) for receiving said phonetic data message from said acoustic server object and converting said phonetic data message to said syntactic data message (phonetic time series is converted to word sequences, column 9, lines 49-51).

In regard to claims 37 and 38, Stanford et al. disclose the architecture is independent of hardware configurations (column 7, lines 56-57) and implemented for different levels of operation over a communications network (column 9, lines 58-65).

Stanford et al. do not explicitly disclose the voice, acoustic, symbolic and task server objects, as well as the voice server object, speech recognition server, and task server object are remote to each other.

Christensen et al. disclose a system for remote objects to communicate over a computer network (Fig. 4 and column 9, lines 10-17).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Stanford et al. make the voice, acoustic, symbolic and task server objects, as well as the voice server object, speech recognition server, and task server

object remote to each other, since remote automation allows the physical performance and administration needs of a computer system to be fully addressed without having to give up the logical model, as taught by Christensen et al. (column 13, lines 63-67).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Albertalli whose telephone number is (571) 272-7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W. R. YOUNG
PRIMARY EXAMINER

BLA 9/9/05